



A Crippling Drought in Africa Shows the Importance of Climate Change Adaptation

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Editor's Note: This article is part of an ongoing series

(<https://www.worldpoliticsreview.com/series/27/food-security>) on food security around the world.

Persistent drought conditions across large swaths of Africa have left tens of millions in need of food assistance

(<https://www.thenewhumanitarian.org/analysis/2019/06/10/drought-africa-2019-45-million-in-need>), particularly in the semi-arid eastern and southern regions of the continent. These areas are on the forefront of the fight against global climate change and will be increasingly hard-pressed to adapt as extreme weather events like droughts, floods and hurricanes become more common. In an email interview with WPR, William G. Moseley, a professor of geography and director of the Program for Food, Agriculture & Society at Macalester College, explains how national governments and aid groups are responding to the current drought and how the affected countries are adjusting to the new reality of extreme, climate change-induced weather patterns.

World Politics Review: Where are the most severe impacts of the drought conditions across Africa being felt? What communities are most at-risk in terms of damage to their livelihoods and food security?

William G. Moseley: According to the Famine Early Warning Systems Network (<http://fews.net/>), a U.S. government-sponsored program that monitors food insecurity around the world, the area of greatest concern right now is the Horn of Africa, namely Somalia, Ethiopia and northern Kenya, which have experienced a prolonged period of below-average rainfall since last year. This follows a drought in 2016-2017 that many areas are still recovering from. International organizations are also worried about food insecurity in South Sudan, northeastern Nigeria and the Democratic Republic of Congo, but this is more related to civil strife than drought conditions. Also of concern, but less severe, are poorly distributed rains and drought conditions impacting small-hold farmers in parts of Malawi, Mozambique, Madagascar and Zimbabwe in southern Africa. Lastly, there are unfolding dry conditions in several areas of the West African Sahel, but it is too early to tell if this will lead to problems.

The impacts of drought are highly variable and often made worse by civil strife, which may impede normal livelihood activities such as farming or the seasonal movement of livestock. In general, the poorest of the poor, with limited food or financial reserves, are the most vulnerable. Certain livelihoods are also more directly impacted by drought



Women who fled drought line up to receive food distributed at a camp for displaced persons in the Daynile neighborhood on the outskirts of Mogadishu, Somalia, May 18, 2019 (AP photo by Farah Abdi Warsameh).

than others. For example, rainfed farmers feel the impacts of drought more directly than people who have wage jobs in the city.

WPR: How are governments, civil society groups and aid agencies mobilizing to respond? What more should be done in order to assist those in need?

Moseley: Most African countries have their own national famine early warning systems, or FEWS—which are often supported by international FEWS efforts—that gauge the size and location of food shortfalls related to drought, other natural disasters and conflict. National emergency food stocks are mobilized in response as needed. In the case of severe food shortages, international efforts attempt to fill in the gap.

The United Nations Food and Agriculture Organization maintains a list of countries requiring external food assistance based on monitoring done by its Global Information and Early Warning System (<http://www.fao.org/gIEWS/country-analysis/external-assistance/en/>). Of the 41 countries currently on the list, 31 are African. Of these countries, many require external assistance because of conflict rather than drought. Those African countries currently in need of international food assistance for shortages related to drought include Zimbabwe, Ethiopia, Kenya, and Somalia.

In the short term, it is important to respond to food shortages in a timely manner so that households are not forced to sell off critical assets, such as farming implements or draft animals, that will inhibit them from recovering and place them in a more vulnerable position. Longer term development assistance needs to promote greater farming system resilience in the face of climate change and higher rainfall variability.

WPR: Given the increased prevalence of droughts like this due to climate change, what actions can countries take to adapt and lessen the impact of future fluctuations in rainfall?

Moseley: Climate change is leading to increasingly variable rainfall in the African context. This not only includes droughts in some years, but excessive rainfall in others. In many cases, seasonal rainfall is also being distributed differently, coming in shorter and more intense bursts. This means that climate change adaptation strategies must be able to deal with both extremes: excessively dry and excessively wet conditions.

It is important to keep in mind that traditional livelihood systems (<http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.591.3174&rep=rep1&type=pdf>) in the semi-arid areas of Africa evolved over time to manage the risk associated with periodic drought. These semi-arid areas include the Sahelian zone (<http://www.acdi.uct.ac.za/acdi/blog/are-semi-arid-regions-climate-change-hot-spots-evidence-southern-africa>) that stretches horizontally across Africa below the Sahara Desert, sections of East Africa and areas around the Kalahari Desert in southern Africa. As such, given Africans' long experience with drought, they already possess an important store of knowledge and experience that positions them as global leaders in climate change adaptation. This suggests that newer strategies should seek to build on this existing wealth of knowledge, while also experimenting with novel tactics that may help mitigate the increasing challenges related to climate change.

Farming communities throughout Africa's semi-arid regions traditionally grew drought-tolerant crops such as sorghum and pearl millet. Given high rainfall variability, farmers also understood that they could harvest a bumper crop in one year, followed by little to no harvest in a subsequent one. As such, many farmers would store excess

grain in familial granaries from a bumper year in order to get them through harvest shortfalls in dry years. Lastly, many farmers used rock lines in their fields in order to control soil erosion following rainfall events.

Sadly, colonial legacies and increasing engagement with global markets have resulted in many of these traditional adaptation strategies being compromised. All across Africa, sorghum and millet are being abandoned in favor of [maize](https://www.mdpi.com/2073-445X/5/3/21), even though maize is more demanding of the soil and needier in terms of rainfall. The reasons for this are complicated, ranging from colonial policies that favored maize production, to the introduction of hybrid maize varieties that are more responsive to inorganic fertilizers, to the additional labor required to protect sorghum and millet from predation by birds. Farmers are also less likely to store bumper harvests, instead preferring to sell surpluses on the market in order to earn cash to cover expenses. Lastly, many rock lines have been removed, as they got in the way when ploughs were introduced. Moving forward, it is important to recognize the genius of some of these older strategies and see how they might be brought back in a way that better fits contemporary constraints.

Climate change adaptation also involves trying out completely new approaches. For example, the semi-arid country of Botswana has been experimenting with backyard gardens over the past eight years. Here, the government is encouraging small-scale vegetable production in a water scarce environment with the use of shade nets [to conserve the water that would otherwise be lost to evaporation](https://www.aljazeera.com/indepth/opinion/2015/06/climate-change-female-farmers-botswana-150611091026193.html). This initiative also involves efficient drip irrigation and rain barrels [to collect rooftop water following rain events](https://www.aljazeera.com/indepth/opinion/2016/09/female-farmers-suffer-southern-africa-drought-160928093451493.html). But despite these measures, some of these gardeners still struggle to get adequate access to water. Now, a collaboration between the University of Botswana and Durham University is experimenting with the use of check dams [to help recharge aquifers and improve access to water for livelihood activities such as gardening](http://www.iapetus.ac.uk/wp-content/uploads/2018/10/IAP2-18-94_Durham_Mathias.pdf). These are just some of the many innovative approaches that could eventually be scaled up in order to improve climate change adaptation.

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